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EXAMINER	
TUN, NAY L	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/585,711	FALCIONI ET AL.	
	Examiner	Art Unit	
	NAY TUN	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 September 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *30,31 and 33-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *30-31 and 33-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims status

1. In the amendment filed on September 01, 2010, claims 1-29, 32 and 49 have been cancelled and claims 30, 33, 38, 40, 41 and 47 have been amended. Therefore, claims 30-31 and 33-48 are currently pending for examination.

Claim Objections

2. Claim 30 is objected to because of the following informalities: Claim 30 recites "t one or more" in line 24-25 which appears to be a typographical error of "to one or more". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Rejections under 35 USC § 112 are withdrawn since the amended claims filed on September 01, 2010 overcome the rejections.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: ***(See MPEP Ch. 2141)***

a. Determining the scope and contents of the prior art;
b. Ascertaining the differences between the prior art and the claims in issue;
c. Resolving the level of ordinary skill in the pertinent art; and
d. Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

5. Claims 30-31 and 33-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Natalini** et al (**Natalini**: US 2002/0095269) in view of **Sharood** et al. (**Sharood**: US 6,453,687) further in view of **Shibaki** et al. (**Shibaki**: US 5,960,234).

Regarding Claim 30, Natalini discloses a monitoring device for use with a household electric appliance, the monitoring device comprising:

i. a read and write memory storing a plurality of measurements of at least one physical quantity relating to the household electric appliance within a predetermined time period during a treatment cycle (Paragraph [0027]: the readings of various sensors are continuously monitored and memory 35 retains monitored information/sensor data for at least the last operating cycle i.e. within the time period of a treatment cycle and Paragraph [0040]: monitored information/sensor data include physical quantities related to the washing machine),

ii. a first interface means to connect to one or more sensors for measuring said at least one physical quantity of the household electric appliance (Paragraph [0040-0041]: monitoring subsystem 32 receives the functional data from sensors via bus 222);

iii. a means for measuring at least one electric quantity by measuring an electric current (Paragraph [0040]: current sensor 124 measures current drawn);

iv. a storage means containing one or more predefined values of the at least one physical quantity (Paragraph [0041]: sensor data are compared with the expected values and/or values from past cycles. A storage means is necessitated);

v. a microcontroller to process a particular combination of at least one physical quantity and the at least one electric quantity to determine an actual combination at an instant in time of a particular set of physical and electrical quantities (Paragraph [0041]: the monitoring subsystem analyzes/processes the functional data from the sensors associated with the most recent operating cycle and Paragraph [0040]: monitored information/sensor data are combination of physical and electrical quantities), to compare that particular combination to the one or more respective predefined values contained in the non-volatile memory each predefined value being a threshold value against which an actual value is compared to determine a proper operation of a particular component of the appliance at that instant in time (Paragraph [0040-0041]: the monitoring subsystem compares the sensor data with the expected values and/or values from past cycles to determine whether the washing machine is operating properly. Paragraph [0040]: monitored information/sensor data are combination of physical and electrical quantities); and

vi. a second interface means to send the at least one piece of information to a remote center for storage (Fig. 1 and 2, network interface 37 to gateway 42 and Paragraph [0054]: gateway retains data).

Natalini does not explicitly disclose the current measured by the current sensor is running through the monitoring device or the storing of a last measured value of said at least one physical quantity causing the deletion of a first measured value within said plurality of values in the read and write memory.

However, the preceding limitation is known in the art of monitoring appliances. **Sharood** discloses a current sensor that measures the current running through the monitoring device (**Sharood**: Col. 9 Lines 6-12 and Fig. 6b). Therefore, it would have been obvious to the one of

the ordinary skill in the art at the time of the invention was made to measure the current running through the monitoring device as a known technique of sensing the current draw in the base device of the appliance with the predictable result of monitoring the functions of the appliance related to the current.

The combined system of **Natalini** and **Sharood** does not explicitly disclose the storing of a last measured value of said at least one physical quantity causing the deletion of a first measured value within said plurality of values in the read and write memory. However, the preceding limitations are known in the art of memory management. **Shibaki** discloses the storing of newly generated data causing the deletion of the oldest data (col. 6 lines 58-60). Therefore, it would have been obvious to the one of the ordinary skill in the art at the time of the invention was made to manage memory as taught by **Shibaki** in the combined system of **Natalini** and **Sharood**, as the known technique of storage in the base device of memory with the predictable results of saving the newest information when there is no empty space left in the memory.

Regarding claim 31, the combined device of **Natalini**, **Sharood**, and **Shibaki** discloses the device of claim 30 as discussed above. The combined device further discloses at least one internal sensor within the household electric appliance where the at least one internal sensor measures a second physical quantity of an internal part of the household device and that the microcontroller further processes the measurements of the second physical quantity (**Natalini**: Paragraph [0040-0041]: a second physical quantity is sensed and processed).

The combined device does not explicitly disclose wireless communication device within the first interface means, the wireless communication device communicating with at least one internal sensor.

However, **Sharood**, in another embodiment of the disclosed invention, teaches that the first interface means (and associated sensor) and monitoring device can be separate units and that the first interface means (and associated sensor) can be connected to the monitoring device (and therefore communication means) by another interface (element 2704, figure 27B and column 28 lines 65-67). It would have been obvious to one of ordinary skill in the art at the time on the invention to use a wireless connection as the interface to reduce the amount of cabling used thereby making it easier to connect the sensor to the monitoring device and increasing the ease of installation and modification (i.e. not limited to a certain cable length).

Regarding claim 33, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses the device of claim 30 as discussed above. The combination further discloses that the device comprises a timing unit, where the timing unit allows an instant time to be associated with the measurements of the one or more physical quantities and at least one electrical quantity (Paragraph [0027]: the subsystem combines the functional data i.e. physical and electrical quantities into historical data, Paragraph [0050]: historical data are associated with the time).

Regarding claim 34, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses the device of claim 30 as discussed above. The combination further discloses that the at least one electrical quantity includes at least one of the following: momentary electric current drawn by the household electric appliance, line voltage applied to the household electric appliance, momentary electric power drawn by the household electric appliance, electric energy consumption of the household electric appliance within a predefined time period, a power factor of the load represented by the household electric appliance, $\cos(\varphi)$ of the load represented by the household electric appliance, and type of reactive power of the load represented by the

household electric appliance (**Natalini**: Paragraph [0040-0041]: current drawn).

Regarding claim 35, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses the device of claim 30 as discussed above. The combined device does not explicitly disclose that the first interface is connected to the one or more sensors through a wireless connection.

However, **Sharood**, in another embodiment of the disclosed invention, teaches that the first interface means (and associated sensor) and monitoring device can be separate units and that the first interface means (and associated sensor) can be connected to the monitoring device (and therefore communication means) by another interface (element 2704, figure 27B and column 28 lines 65-67). It would have been obvious to one of ordinary skill in the art at the time on the invention to use a wireless connection as the interface to reduce the amount of cabling used thereby making it easier to connect the sensor to the monitoring device and increasing the ease of installation and modification (i.e. not limited to a certain cable length).

Regarding claim 36, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses the device of claim 30 as discussed above. The combination further discloses that the second interface means is connected to the remote center through a wireless connection (**Natalini**: Paragraph [0026]).

Regarding claim 37, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses the device of claim 30 as discussed above. The combination further discloses that the household electric appliance includes one of: a clothes dryer, a washing/drying machine, a dishwasher, a refrigerator, a freezer, a refrigerator/freezer, an electric oven, a gas oven, a microwave oven, a gas cooking top, an electric cooking top, a magnetic induction cooking top, a kitchen hood, a conditioner, a gas boiler, an electric water heater, an air conditioner, a hair dryer, an iron, a Hi-Fi

system, a mixer or any other electric kitchenware, a lighting device, an alarm device (**Natalini**: washing machine 18).

Regarding claim 38, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses the device of claim 30 as discussed above. The combination further discloses that said at least one physical quantity includes at least one of: temperature, flow rate, conductivity, weight, absolute humidity, relative humidity, pressure, linear displacement, linear velocity, linear acceleration, angular displacement, angular velocity, angular acceleration, chemical concentration, sound pressure, sound intensity, light intensity, oscillation frequency, and oscillation amplitude (**Natalini**: Paragraph [0040]: concentration of laundry detergent).

Regarding claim 39, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses the device of claim 30 as discussed above. The combination further discloses that the device comprises an information storage means for storing the at least one piece of information in the read and write memory (**Natalini**: Fig. 3, step 312 and Paragraph [0037 and 0042]: the appropriate flag 228 is set to indicate that the alarm message that identifies the fault).

Regarding claim 40, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses the device of claim 30 as discussed above. The combination further discloses that the household electric appliance is one of a laundry washing machine and a washing/drying machine adapted to perform at least one wash treatment on textile items, said at least one physical quantity being preferably at least one of the following: weight of the textile items being present in the basket of the washing machine or the washing/drying machine, flow rate of water supplied to the washing machine or the washing/drying machine, temperature of washing liquid contained in a tub of the washing machine or the washing/drying machine, and conductivity of the washing liquid drained

by the washing machine or the washing/drying machine, where the washing liquid comprises water and at least one washing agent (**Natalini**: Paragraph [0040] washing machine 18 with sensor for concentration of the detergent. One of the ordinary skill in the art understands that concentration of the detergent can be sensed by the conductivity sensor).

Regarding Claim 41, Natalini discloses a monitoring device for use with a household electric appliance, the monitoring device comprising:

i. a read and write memory storing a plurality of measurements of at least one physical quantity related to the household electric appliance, within a predetermined time period during a treatment cycle (Paragraph [0027]: the readings of various sensors are continuously monitored and memory 35 retains monitored information for at least the last operating cycle i.e. within the time period of a treatment cycle and Paragraph [0040]: monitored information includes physical quantities related to the washing machine),

ii. one or more external sensors (Fig. 1 and paragraph [0049], adaptors 34 includes external sensors measuring external conditions and Paragraph [0031], external conditions are related to the appliance) and a first interface means (Paragraph [0041]: bus 222) to connect to one or more internal sensors for measuring said at least one physical quantity of the household electric appliance (Paragraph [0041]: monitoring subsystem 32 receives the functional data from sensors and Paragraph [0040]: sensors are internal), where the one or more internal sensors are connected to the monitoring device by way of an electronic control means and the first interface means (Fig. 2 and Paragraph [0041], processor 33 and Bus 222);

iii. a means for measuring at least one electric quantity by measuring an electric current (Paragraph [0040]: current sensor 124 measures current drawn);

iv. a microcontroller configured to:

a) process measurements of the one or more physical quantities and the at least one electric quantity to determine at least one piece of information relating to or being employed in said treatment cycle during operation of the household electric appliance, where the at least one piece of information includes at least one of: functional information, statistical information, and diagnostic information relating to the household electric appliance (Paragraph [0041]: the monitoring subsystem determines whether the washing machine is operating properly i.e. the functional information by analyzing/processing the functional data from the sensors and Paragraph [0040] the functional data from sensors includes physical and electrical quantities) by comparing a value of said at least one physical quantity with one or more predefined values that relate to values for the treatment being performed by the appliance at an instant in time (Paragraph [0040-0041]: the monitoring subsystem compares the sensor data with the expected values and/or values from past cycles); and

v. an information storage means for storing the at least one piece of information in the read and write memory (Fig. 3, step 312 and Paragraph [0037 and 0042]: the appropriate flag 228 is set to indicate that the alarm message that identifies the fault).

Natalini does not explicitly disclose the connection of the one or more external sensors to the first interface.

However, in the embodiment of another smart appliance refrigerator, **Natalini** discloses the connection of the one or more external sensors to the first interface or the microcontroller i.e. subsystem processing the measurement of the one or more physical external quantities with the internal and electric quantities (*Paragraph [0035]: sensor for ambient temperature and*

Paragraph [0036]). **Natalini** discloses that the analysis of the collected data further includes the environmental information that is measured or sensed by other appliances i.e. external sensors to the monitored appliance (Paragraph [0031]) and such environmental information can be ambient temperature, water leakage (Paragraph [0049]).

Therefore, it would have been obvious to the one of the ordinary skill in the art at the time of the invention was made to connect one or more external sensors to the subsystem, as taught by the second embodiment of **Natalini**, as a known improvement in the base device of smart appliance with the predictable results of a more comprehensive data analysis in monitoring performance of the appliance and the motivation also lies in the **Natalini** reference that the environmental conditions can be used to determine if the monitored appliance requires service or is instead responding to changes in its operating environment (Paragraph [0065]).

The modified device of **Natalini** does not explicitly disclose the measured current is the current running through the monitoring device or extrapolation from said plurality of measurements of said at least one physical quantity a data packet representative of the evolution of said at least one physical quantity within said predefined time period over one or more treatment cycles.

However, the preceding limitation is known in the art of monitoring appliances. **Sharood** discloses a current sensor that measures the current running through the monitoring device (**Sharood**: Col. 9 Lines 6-12 and Fig. 6b). Therefore, it would have been obvious to the one of the ordinary skill in the art at the time of the invention was made to measure the current running through the monitoring device as a known technique of sensing the current draw in the base device of the appliance with the predictable result of monitoring the functions of the appliance

related to the current.

Sharood further discloses an appliance monitoring system that extrapolates the time of failure from the measured conditions at intervals designated by the user (**Sharood**: Col. 27, lines 30-40: calculating the speed at which temperature is rising to estimate i.e. extrapolate how long it will be until food spoilage occurs). **Natalini** also teaches that warning for an appliance is also desirable before the actual failure occurs (Paragraph [0044]).

Therefore, it would have been obvious to the one of the ordinary skill in the art at the time of the invention was made to extrapolate a data packet from the measurements of said at least one physical quantity over a predetermined time period, as taught by **Sharood**, in the system of **Natalini**, as a known improvement in the base device of appliance monitoring system, with the predictable result of preventing the imminent failure.

The combined system of **Natalini** and **Sharood** does not explicitly disclose the storing of a last measured value of said at least one physical quantity causing the deletion of a first measured value within said plurality of values in the read and write memory.

However, the preceding limitations are known in the art of memory management. **Shibaki** discloses the storing of newly generated data causing the deletion of the oldest data (col. 6 lines 58-60). Therefore, it would have been obvious to the one of the ordinary skill in the art at the time of the invention was made to manage memory as taught by **Shibaki** in the combined system of **Natalini** and **Sharood**, as the known technique of storage in the base device of memory with the predictable results of saving the newest information when there is no empty space left in the memory.

Regarding claim 42, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses

the device of claim 41 as discussed above. The combination further discloses that the first interface means is an electric cable to the one or more external sensors *(Fig. 1 and Paragraph [0049], Adaptor 34 with external sensors is connected to the subsystem of the washing machine).*

Regarding claim 43, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses the device of claim 41 as discussed above. **Sharood**, in another embodiment of the disclosed invention, teaches that the first interface means (and associated sensor) and monitoring device can be separate units and that the first interface means (and associated sensor) can be connected to the monitoring device (and therefore communication means) by another interface (element 2704, figure 27B and column 28 lines 65-67). It would have been obvious to one of ordinary skill in the art at the time on the invention to use a wireless connection as the interface to reduce the amount of cabling used thereby making it easier to connect the sensor to the monitoring device and increasing the ease of installation and modification (i.e. not limited to a certain cable length).

Regarding claim 44, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses the device of claim 41 as discussed above. The combination further discloses that the first interface means is connected to the one or more external sensors (Fig. 1 and Paragraph [0049], Adaptor 34 with external sensors is connected to the subsystem of the washing machine). The combination does not explicitly disclose that the connection is wireless.

However, **Sharood**, in another embodiment of the disclosed invention, teaches that the first interface means (and associated sensor) and monitoring device can be separate units and that the first interface means (and associated sensor) can be connected to the monitoring device (and therefore communication means) by another interface (element 2704, figure 27B and column 28

lines 65-67). It would have been obvious to one of ordinary skill in the art at the time on the invention to use a wireless connection as the interface to reduce the amount of cabling used thereby making it easier to connect the sensor to the monitoring device and increasing the ease of installation and modification (i.e. not limited to a certain cable length).

Regarding claim 45, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses the device of claim 41 as discussed above. **Natalini** further discloses that the first interface means is connected to the communication means (Paragraph [0041]: bus 222 is connected to the subsystem 32 and Paragraph [0045]: subsystem 32 includes communication means and Fig. 2, 37).

Regarding claim 46, the combined device of **Natalini**, **Sharood** and **Shibaki** discloses the device of claim 41 as discussed above. The combination further discloses that the communication means and the one or more internal sensors are connected through an electronic control means, where the electronic control means collect, stores, and processes the measurements from the one or more physical quantities from the one or more internal sensors (**Natalini**: Paragraph [0041] and Fig. 2, 37, subsystem 32 with processor 33 receives sensor data and send via network interface).

Regarding Claim 47, Natalini discloses a system for monitoring a household electric appliance, the system comprising:

a) a household electric appliance (Fig. 1, washing machine 18);

b) one or more external sensors to measure one or more physical external quantities of the household electric appliance being external measurements (Fig. 1 and paragraph [0049], adaptors 34 includes external sensors measuring external conditions and Paragraph [0031], external

conditions are related to the appliance);

c) an electronic control means connected to one or more internal sensors, where the one or more internal sensors measure one or more physical internal quantities of the household electric appliance, the electronic control means configured to collect, store, and process measurements of the one or more physical internal quantities being internal measurements (*Paragraph [0041]: monitoring subsystem 32 receives and analyzes/processes the sensor data from sensors and stores the sensor data from past cycles Paragraph [0040]: sensors are internal and sensor data are measurements of physical quantities*);

d) a communication means communicating with the electronic control means to transfer one or more of said internal measurements, over a predetermined time period to a first interface means on a monitoring device (Paragraph [0041]: monitoring subsystem receives sensor data over the bus 222);

e) the monitoring device including:

a. a read and write memory storing a plurality of measurements of at least one physical quantity within a predetermined time period (*Paragraph [0027]: the readings of various sensors are continuously monitored and memory 35 retains monitored information for at least the last operating cycle i.e. within the time period of a treatment cycle and Paragraph [0040]: monitored information includes physical quantities related to the washing machine*),

b. the first interface means to connect to the communication means to receive the measurements of the one or more physical internal quantities (Paragraph [0041]: monitoring subsystem receives sensor data over the bus 222),

c. a means for measuring at least one electric quantity by measuring an electric current

(*Paragraph [0040]: current sensor 124 measures current drawn*),

d. a timing unit to associate an instant in time at which the measurements of the one or more physical quantities and the at least one electric quantity are taken (*Paragraph [0027]: the subsystem combines the functional data i.e. physical and electrical quantities into historical data, Paragraph [0050]: historical data are associated with the time*),

e. a microcontroller configured to:

(i) process the measurements of one or more physical internal quantities, and the at least one electric quantity, at the instant in time, to determine sensed information relating to the household electric appliance, where the sensed information includes functional information, statistical information, and diagnostic information relating to the household electric appliance (*Paragraph [0040] the functional data from sensors includes physical and electrical quantities. Paragraph [0041]: the monitoring subsystem analyzes i.e. processes the functional data from the sensors and determines whether the washing machine is operating properly i.e. the functional information. Paragraph [0027]: statistical data. Paragraph [0042]: message that identifies the indicated fault*), said sensed information being a combination of values of physical internal quantity and at least one electric quantity with a reference combination of physical and electrical quantities being the combination that best represents the proper operation of the appliance at that instant in time (*Paragraph [0040-0041]: the monitoring subsystem compares the sensor data with the expected values and/or values from past cycles. The expected values and/or values from past cycles represents the proper operation of the appliance since the proper operation is determined based on comparison with these values*), and

(ii) collect information that allows the system to trace a history of the monitored electric

appliance that permits the microprocessor to build in the read and write memory, profiles being indicative of a trend within a predefined time period of a particular physical quantity or typology of information obtained by the microcontroller based upon values detected by the sensors (*Paragraph [0027]: the subsystem also combines the functional data for a series of operating cycles into historical data and aggregates the historical data into statistical data that relates to all of the cycles performed by the intelligent appliance*); and

f. a second interface means to send the at least one piece of information to a remote center (*Paragraph [0045] and Fig. 2, network interface 37*); and

g. the remote center configured to collect the at least one piece of information from one or more monitoring devices connected to respective household electric appliances and to extract statistical information about the household electric appliances being monitored *([Paragraph [0031]*).

Natalini does not explicitly disclose the connection of the one or more external sensors to the first interface or the microcontroller i.e. subsystem processing the measurement of the one or more physical external quantities with other quantities.

However, in the embodiment of another smart appliance refrigerator, **Natalini** discloses the connection of the one or more external sensors to the first interface or the microcontroller i.e. subsystem processing the measurement of the one or more physical external quantities with the internal and electric quantities (*Paragraph [0035]: sensor for ambient temperature and Paragraph [0036]*). **Natalini** discloses that the analysis of the collected data further includes the environmental information that is measured or sensed by other appliances i.e. external sensors to the monitored appliance (Paragraph [0031]) and such environmental information can be ambient

temperature, water leakage (Paragraph [0049]). Therefore, it would have been obvious to the one of the ordinary skill in the art at the time of the invention was made to connect one or more external sensors to the subsystem and analyze/process the measurements from the external sensors with the internal and electric quantities, as taught by the second embodiment of **Natalini**, as a known improvement in the base device of smart appliance with the predictable results of a more comprehensive data analysis in monitoring performance of the appliance and the motivation also lies in the **Natalini** reference that the environmental conditions can be used to determine if the monitored appliance requires service or is instead responding to changes in its operating environment (Paragraph [0065]).

The modified device of **Natalini** does not explicitly disclose the measured current is the current running through the monitoring device or extrapolation from said plurality of measurements of said at least one physical quantity a data packet representative of the evolution of said at least one physical quantity within said predefined time period over one or more treatment cycles.

However, the preceding limitation is known in the art of monitoring appliances. **Sharood** discloses a current sensor that measures the current running through the monitoring device (**Sharood**: Col. 9 Lines 6-12 and Fig. 6b). Therefore, it would have been obvious to the one of the ordinary skill in the art at the time of the invention was made to measure the current running through the monitoring device as a known technique of sensing the current draw in the base device of the appliance with the predictable result of monitoring the functions of the appliance related to the current.

Sharood further discloses an appliance monitoring system that extrapolates the time of

failure from the measured conditions at intervals designated by the user (**Sharood**: Co. 27, lines 30-40: calculating the speed at which temperature is rising to estimate i.e. extrapolate how long it will be until food spoilage occurs). **Natalini** also teaches that warning for an appliance is also desirable before the actual failure occurs (Paragraph [0044]).

Therefore, it would have been obvious to the one of the ordinary skill in the art at the time of the invention was made to extrapolate a data packet from the measurements of said at least one physical quantity over a predetermined time period, as taught by **Sharood**, in the system of **Natalini**, as a known improvement in the base device of appliance monitoring system, with the predictable result of preventing the imminent failure.

The combined system of **Natalini** and **Sharood** does not explicitly disclose the storing of a last measured value of said at least one physical quantity causing the deletion of a first measured value within said plurality of values in the read and write memory.

However, the preceding limitations are known in the art of memory management. **Shibaki** discloses the storing of newly generated data causing the deletion of the oldest data (col. 6 lines 58-60). Therefore, it would have been obvious to the one of the ordinary skill in the art at the time of the invention was made to manage memory as taught by **Shibaki** in the combined system of **Natalini** and **Sharood**, as the known technique of storage in the base device of memory with the predictable results of saving the newest information when there is no empty space left in the memory.

Regarding claim 48, the combined system of **Natalini**, **Sharood** and **Shibaki** discloses the system of claim 47 as discussed above. **Natalini** further discloses that the remote center receives a plurality of information sent by the monitoring device that the remote center collects

and sorts for the purpose of identifying at least one parameter related to the operation of a washing machine or a washing/drying machine, the at least one parameter being preferably at least one of the following: number of wash treatments performed by the washing machine or the washing/drying machine within a predefined time interval, quantity and typology of textile items loaded on average by a user for each wash treatment, quantity and typology of washing agents loaded on average by the user for each wash treatment, average quantity of water used by the washing machine or the washing/drying machine for each wash treatment, and average electric energy absorbed by the washing machine or the washing/drying machine for each wash treatment (Paragraph [0069]).

Response to Arguments

6. Applicant's arguments filed on September 01, 2010 have been fully considered but they are moot in view of new grounds of rejections.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on

the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nay Tun whose telephone number is (571) 270-7939. The examiner can normally be reached on Mon-Thurs from 9:00-5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/NAY TUN/

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